1004.I-13 Impact of Gender on the Incidence and Outcome of Contrast-Induced Nephropathy After Percutaneous Coronary Intervention

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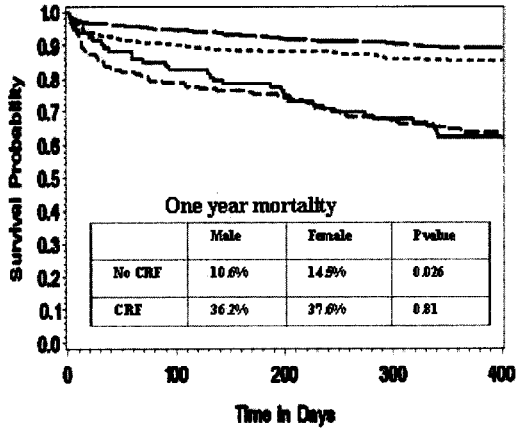
Background. Contrast induced nephropathy (CIN) after PCI is associated with increased mortality. However, the role of gender in the development and prognosis of CIN is unknown.

Methods and results. Of 8,628 pts who underwent PCI at a single center, 1431 (16.5%) developed CIN, defined as >25% increase in serum creatinine value compared to pre-PCI.

CIN occurred in 23.6% of female vs. 17.4% of male patients (p<0.0001). By multivariate analysis female gender (OR= 1.4, p<0.0001), chronic renal failure (CRF, defined as pre-PCI serum creatinine value >1.5mg/dl) (OR= 1.8, p<0.0001), diabetes (OR=1.5, p<0.0001), age (OR=1.01, p<0.0001), and hypertension (OR= 1.2, p=0.0035) were independent predictors of CIN.

Kaplan-Meier estimates of 1-year survival after CIN according to gender and baseline (pre-PCI) CRF status are indicated in the figure.



Conclusions. Female gender is an independent risk factor for the development of CIN after PCI, and a determinant of worse prognosis in patients without baseline CRF who develop CIN after PCI.

1004.I-14 Incidence, Predictors, and Economic Impact of Contrast Induced Nephropathy: Results in 8,628 Patients Treated With Percutaneous Coronary Interventions

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Background: Contrast induced nephropathy (CIN) is a known complication after percutaneous coronary interventions (PCI) and has been associated with unfavorable early and late outcome. The incidence, predictors and economic impact of this complication have not been well studied.

Methods and Results: Of a total 8268 consecutive patients who underwent PCI (from 1994 to 1999), 1431 (16.5%) developed CIN (>25% rise in serum creatinine compared to pre-PCI); 12% of CIN patients required hemodialysis (Table).

By multivariate analysis baseline chronic renal failure (OR= 1.74, p<0.0001), diabetes (OR=1.62, p<0.0001), female gender (OR= 1.25, p<0.0028), age (OR=1.01, p<0.0001), and severe heart failure (OR= 2.9, p<0.0001) were independent predictors of CIN development.

Conclusions: Baseline characteristics predict high risk patients for CIN. Meticulous CIN preventive measures are justified in view of the considerable prevalence and significant resource utilization associated with this PCI complication.

In-hospital outcome and resource utilization

	CIN n=239	No CIN n=504	p value
Mortality	4.7%	0.9%	0.0003
Cardiac Death	2.4%	0.7%	0.07
Non-cardiac death	2.4%	0.2%	0.003
In-hospital MACE	4.7%	1.4%	0.0008
In-hospital stroke	7.9%	2.9%	0.001
Vascular complications	13.8%	5.3%	<0.0001
Length of hospital stay (days)	9.6 ± 7.2	4.9 ± 7.2	<0.0001
Length of ICU stay (days)	2.3 ± 4.4	0.6 ± 1.8	<0.0001

POSTER SESSION

1004.II Interventional Outcomes

Sunday, March 17, 2002, 9:00 a.m.-11:00 a.m.
Georgia World Congress Center, Hall G
Presentation Hour: 9:00 a.m.-10:00 a.m.

1004.II-15 Gender Differences in Clinical Outcomes After Percutaneous Coronary Intervention in Small Coronary Arteries

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Background: Women have worse clinical outcomes than men after percutaneous coronary intervention (PCI), possibly because they have smaller coronary artery diameters than men. We investigated the impact of gender on clinical outcome after PCI in small coronary arteries to evaluate whether gender was a determinant of adverse outcomes.

Methods: We studied the procedural and one year outcomes of 1,094 consecutive patients who underwent PCI of de novo lesions in native coronary arteries < 3.0 mm in reference vessel diameter.

Results: Women (n=354) were older, had higher rates of hypertension and diabetes and were less likely to have had prior revascularization than men (n=740). Angiographic success and pre- and post-PCI arterial dimensions were similar between the groups. Post procedure, women had significantly more vascular complications (9.1% vs 4.0%, p=0.001). Multivariate analysis of the 1 year clinical events adjusted for differences in baseline characteristics showed similar clinical restenosis and MACE rates between the 2 groups.

	Women (n=354)	Men (n=740)	P Value
Age (yrs)	67.3 ± 11.0	62.5 ± 11.1	0.0001
Diabetes (%)	41.9	26.7	<0.0001
Hypertension (%)	71.9	55.5	<0.0001
Ref. Vessel Diameter (mm)	2.39 ± 0.4	2.42 ± 0.4	0.20
Final Diameter Stenosis (%)	13.6 ± 19.6	14.9 ± 20.2	0.24
1-Year Events	**Assumed Odds Ratio**	**Adjusted Odds Ratio**	
Death	1.00	0.67	0.18
Target Lesion Revascularization	1.00	0.94	0.75
MACE	1.00	1.23	0.34

MACE = Death, Myocardial Infarction, Target Lesion Revascularization

Conclusion: In patients undergoing small coronary artery PCI, women have similar clinical restenosis and major cardiac event rates compared to men.

1004.II-16 Initial and Six-Month Results of Gradual and Prolonged Balloon Angioplasty in Small Coronary Arteries: A Randomized Comparison With Cutting Balloon Angioplasty and Conventional Balloon Angioplasty

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Background: Recent reports have shown that gradual and prolonged balloon angioplasty (GPBA) achieved similar 6 months results to stenting, and suggested that GPBA may cause less arterial trauma and produce a larger arterial lumen compared to conventional balloon angioplasty (POBA). However, there is little data of GPBA in small coronary arteries. The purpose of this study was to evaluate early and late outcomes of GPBA using Perfusion Balloon in small coronary arteries.

Methods: Study subjects consisted of 255 lesions of 240 patients with the reference diameters of target vessel less than 3 mm, who were enrolled and randomized to GPBA group (85 lesions; 80 Pt.), cutting balloon angioplasty (CBA) group (83 lesions; 78 Pt.) or POBA group (87 lesions; 82 Pt.). We performed gradual and prolonged inflation more than 10 min using perfusion balloon in GPBA. Intravascular ultrasound was performed before and after angioplasty.

Results: The clinical and lesion characteristics were similar in all groups. Protocol success rate was 80% in GPBA, 75% in CBA, and 64% in POBA (p <0.05, GPBA vs. POBA). 5 lesions in GPBA and 7 lesions in CB crossed over to POBA because of the inability to reach the lesion.

Initial and 6-month Results

	GPBA	CBA	POBA
Major dissection (%)	19*	22	38
Elastic recoil (mm2)	0.67±0.44*	0.67±0.38*	1.03±0.64
Unplanned stenting (%)	12*	15*	36
6-month MACE (%)	23*	24*	43
6-month TLR (%)	21*	22*	40

TLR = target lesion revascularization, MACE = major adverse cardiac events (Death, MI and TLR), *p<0.05 vs. POBA